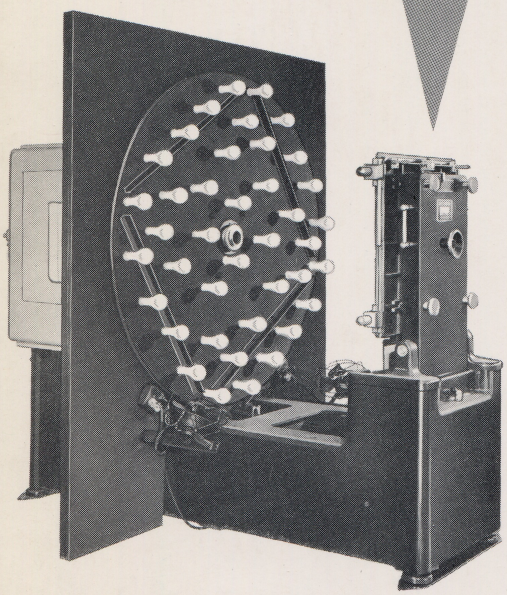
S. ROSENTHAL & CO., Inc.

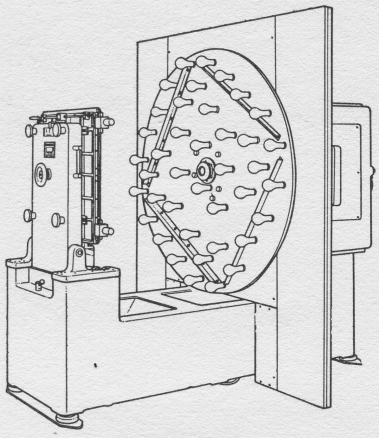


The Brightype® Method

LUDLOW TYPOGRAPH COMPANY

2032 Clybourn Avenue, Chicago 14, Illinois

The Brightype® Method



LUDLOW TYPOGRAPH COMPANY

2032 Clybourn Avenue, Chicago 14, Illinois

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Four Brightype Layouts

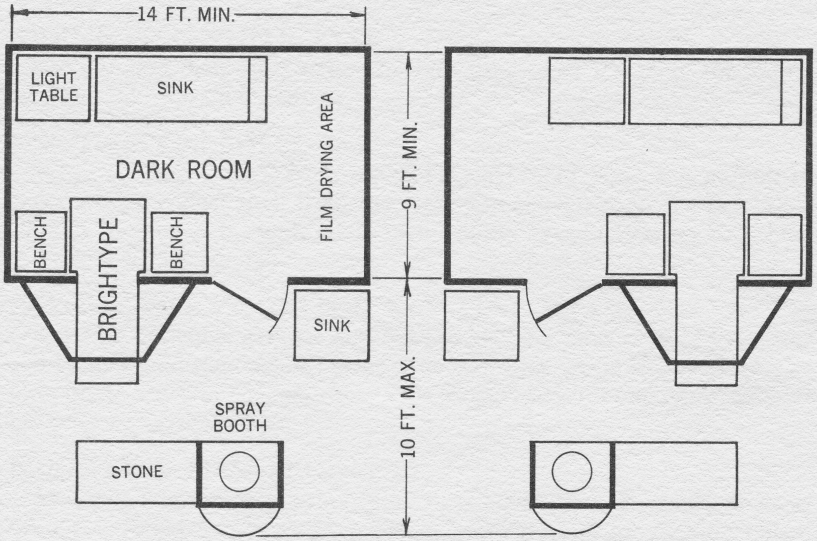


FIG. 1

FIG. 2

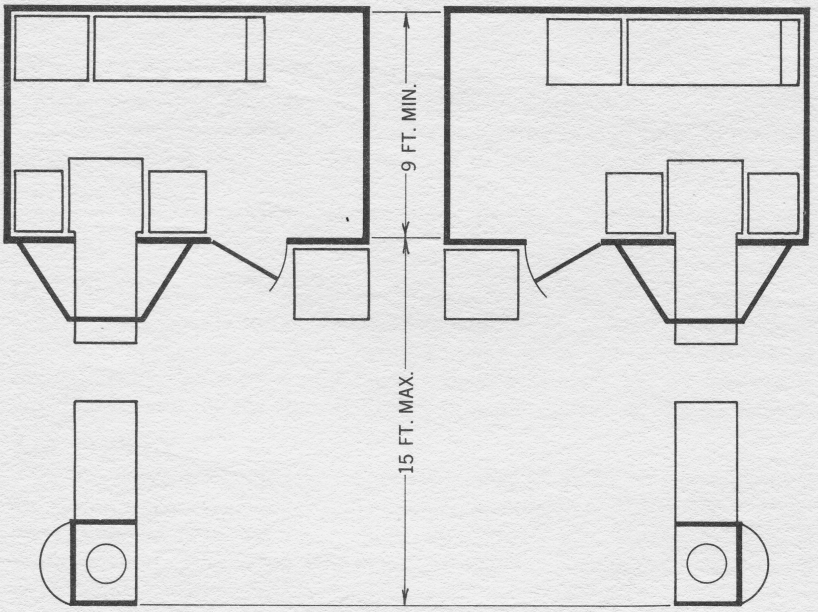


FIG. 3

FIG. 4

DETAILED DRAWINGS ARE AVAILABLE

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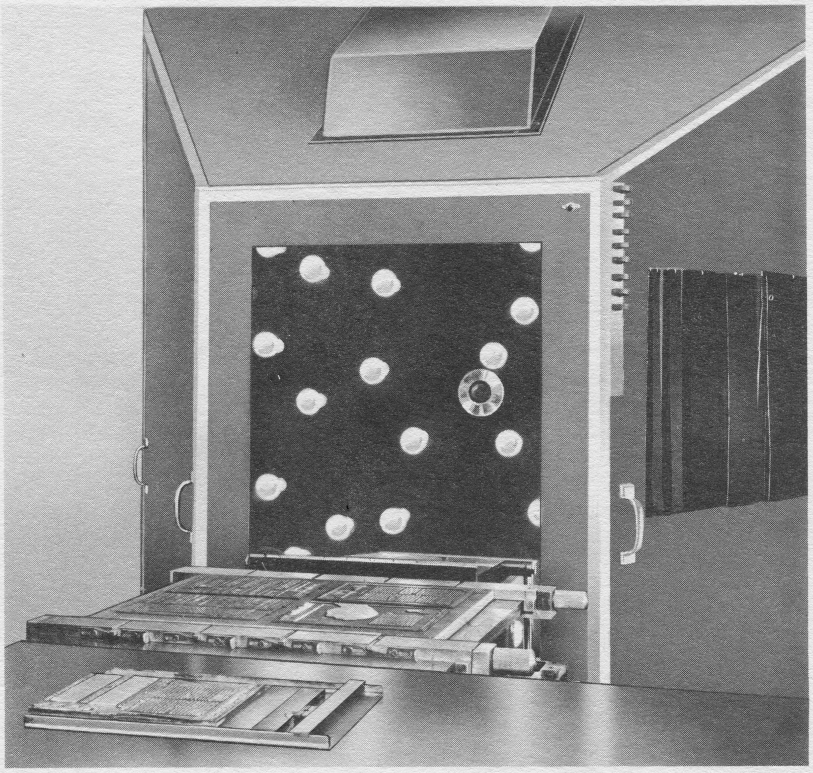
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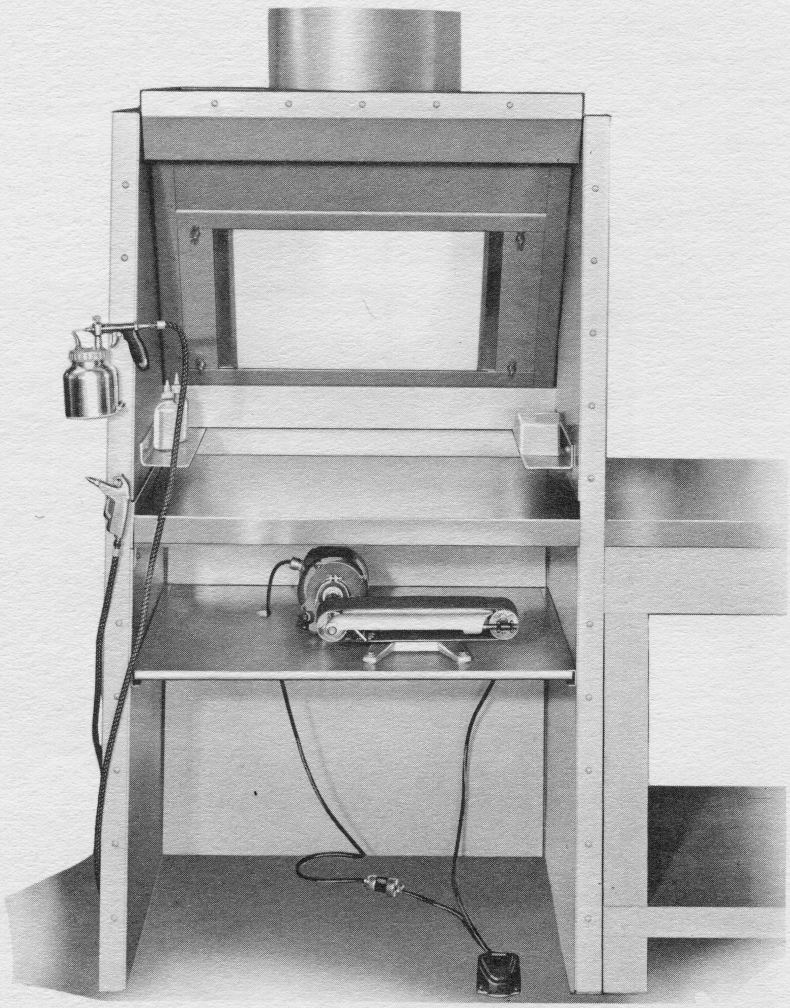
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The Brightype Method



Brightype is a production method which converts any kind of letterpress material directly to a photographic image on film or paper. It consists of form preparation equipment; a special camera with a patented rotating lighting system which creates a controlled shadowless illumination of the copy; and complete darkroom equipment required for processing of photographic material.

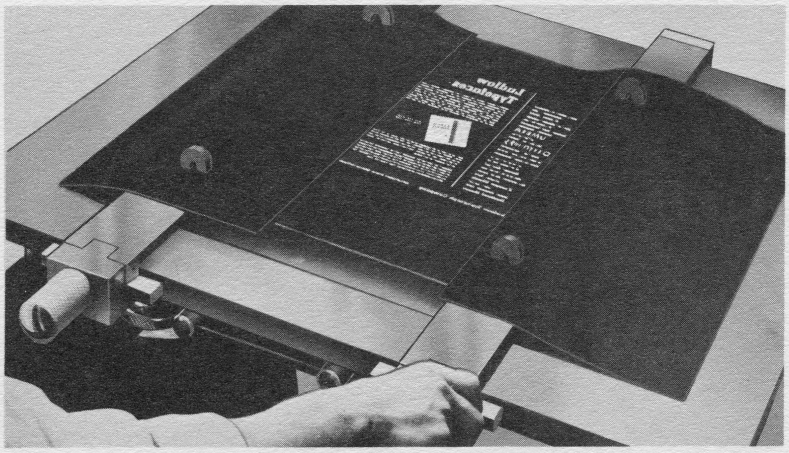


Brightype spray booth with form preparation equipment.

The form is placed in the spray booth and the printing surface is rubbed with a large eraser, which creates a diffuse-reflecting surface.

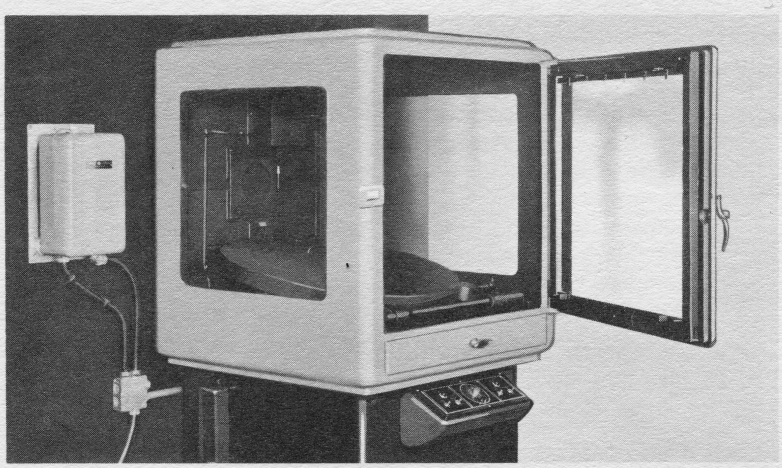
The entire form is sprayed with an instantaneously-drying solution containing lampblack.

Another large eraser is rubbed over the surface of the form, removing the lampblack and leaving the surface relatively bright. The form is now essentially a negative image.



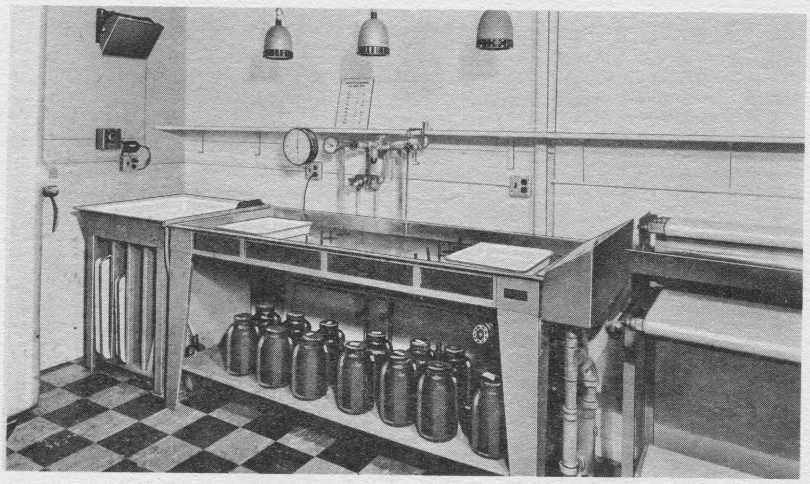
Form on copyboard. Background masked out.

The form is centered on the copyboard, and clamped in position. Edges and gutters are then masked with velour and magnets, so that no part of the background will appear on the film. The form is then raised to vertical position, and is ready to photograph.



Darkroom end of camera contains control panel, reversing mirror, and vertical and horizontal film holders.

Sensitized material is placed on either a vertical or horizontal stay-flat plate, according to whether right- or wrong-reading film or paper prints are desired. Usually the vertical position is used for paper prints and material for offset surface plates, and the horizontal position for deep-etch offset, letterpress and rotogravure processes. A large plane mirror is used to reflect the image to a horizontal position, and is lowered when the vertical position is used.



Photographic processing area in darkroom consisting of inspection table, temperature controls and wet contact equipment.

The timer is set for sensitized material in use, and one button is pressed which controls the lighting and exposure, after which the sensitized material is developed according to a fixed schedule of time and temperature. This insures uniform results, and the end result is always a positive. A negative may be made either by contact or by chemical reversal.

BRIGHTYPE SPECIFICATIONS

Floor Space—See drawings of "4 Brightype Layouts"
Maximum Film Area—25¾" x 25¾"
Maximum Rectangle—18" x 24"
Maximum Square—21.2" x 21.2"
Longest Rectangle—15⅜" x 25¾"
Maximum Image Size—30" circle
Camera Dimensions—37" wide x 92" long x 72" high
Weight—Camera, 2000 lbs. Total equipment about 6200 lbs.

220V single phase AC 3-wire circuit required. This is split into two 110V circuits, with 30 amp on each leg. Transformer may be required to obtain the single-phase current.

WORK ORGANIZATION

Catalogs and Publications

Conversion of letterpress forms by the Brightype Method is facilitated by proper handling and organization *before* the forms reach the spray booth.

Before starting makeup of catalog or publication jobs containing line and halftone cuts, examine the cuts and have all the resist removed. This resist must be removed from *all* cuts, regardless of whether they are to be converted as is, or in made-up form.

The printing surface of all forms should be clean and entirely free from dried ink.

Each plant must determine whether the Brightype operator should take

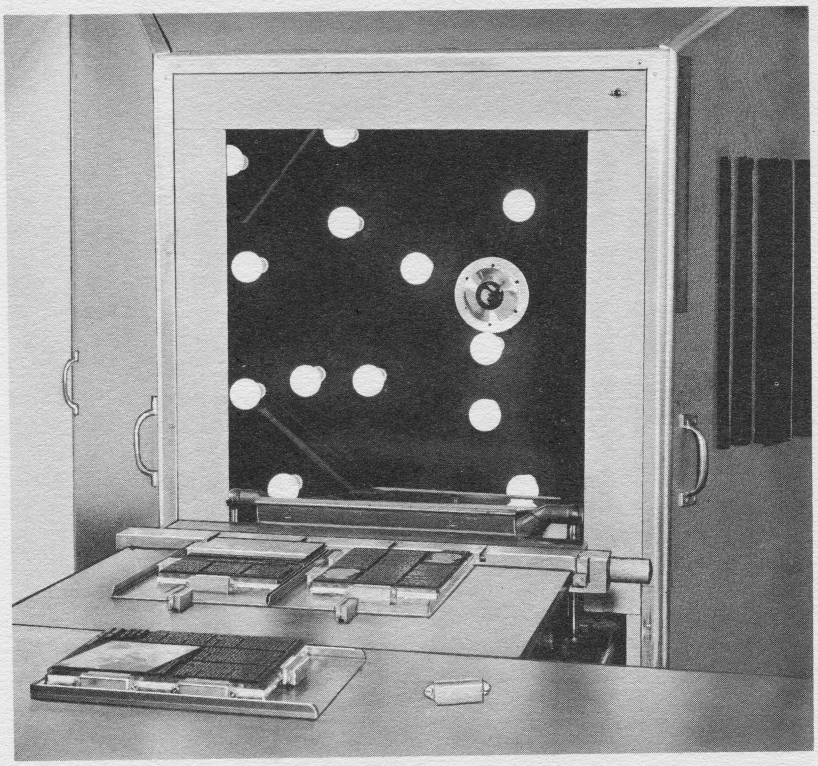
time to lock up forms, or whether the forms are to be delivered to this department locked up in chases or on special galleys. This matter can be determined by the nature of the job. After the initial lockup of a number of forms, the Brightype operator can exchange pages to be processed for pages already processed.

On jobs such as book or publication work, the size of film to be used should be determined before Brightype processing. By having the film slightly larger than the bindery layout, so that an overlap occurs, it becomes easy for the stripper to tape the various components into one sheet for offset plate-making.

Magnetic Locks

The most economical method of handling publications and book work is to place a tie up slug and string around each unit as it is made up. The pages are then locked onto the galley by the Brightype operator using magnetic clamps. The galleys are then locked onto the copyboard with magnetic clamps.

Masks can be cut for publication and book work. Use a stiff cardboard and spray with lacquer spray. These masks can be placed in position and held in place with magnets placed over the magnets used for locking the pages onto the galleys.



Magnetic clamps for locking form on galleys on copyboard.



Plates mounted on board.

Book Work

Book plates, which are usually 11-point electros, are mounted at least 4-up on ¾″ plywood boards. Use 10 or more boards at a time. Allow ample margins between the plates so the pages can be cut apart for stripping. Stops at gutter and head of each plate may be ½″ wood screws, which project above the board about ⅛.″ The plates are placed against these stops, and a No. 4 tack is placed on the side opposite the gutter and driven into place with a leather-headed mallet. Four tacks will hold four plates. Use tack extractor for demounting. Shoot plates in consecutive order as stored in book boxes, which reduces the time of handling. Nothing is gained by shooting plates to binder's layouts.

Spray background with Negative Spray or lacquer and it will not be necessary to mask with velour.

Note: Best production is obtained by processing the work in bunches. Pre-prepare in groups. Spray in groups. Inspect in groups. Load and shoot in groups.

PRODUCT IDENTIFICATION

Job ticket instructions for the Brightype department are simplified when the following abbreviations are used: "WR" for wrong-reading; "RR" for right-reading.

When a film is printed down on metal, the emulsion is in contact with the plate and away from the operator. Thus a deep-etch positive or rotogravure positive would be an "RR" positive. A negative made from an "RR" positive for photoengraving would be a "WR" negative.

A film positive to be used in making a contact negative for offset surface plates would be a "WR" positive.

A black-and-white paper print for conventional paste-up work would be an "RR" paper print, as the emulsion in this case faces the operator.

"RESIST"—DEFINITION—REMOVAL

Photoengravers apply a sensitized coating to copper, zinc or magnesium, which is light-hardened under a negative. The image is developed and the background etched to the proper depth. The coating which forms the image and prevents etching is called a "resist."

When this coating is blue, the resist is called a "Cold Top" and may be removed with "Cold Top Remover" or a wet brass plate-brush and FFF pumice, or the Gaco Resist Remover equipment may be used. The photoengraver will remove this before delivery, if specified.

When dark brown or yellowish, the coating is a glue or plastic coating which has been heat-treated and is harder to remove than Cold Top. However, it may be removed with a wet brass brush and FFF pumice or Gaco Remover. The photoengraver will remove this before delivery, if specified.

How to Use Resist Remover Equipment

Turn on the infra-red lamps under the griddle about 30 minutes before using. Pour a small amount of Gaco Remover on griddle, place cuts face down and leave in place 1 to 3 minutes, making sure that the remover oozes out on all edges.

Wipe off with rag under running water, and dry with air blast.

3 ounces of lye to a quart of water is an alternative to Gaco Remover, but not so effective.

Removing Resist from Cuts in Classified Ad Pages

Hang two or four 150 watt infra-red lamps about 5½" above type forms placed on stone or storage cabinet. Swab Gaco onto cuts with a cotton swab and push page under lamp for 1 to 2 minutes. Wipe off Gaco and resist with a wet rag well rung out. Then rub up form with pumice before placing in spray booth. This method has been successful on all types of resist. Some resists may require several applications.

Removing Resist With Brass Plate-Brush

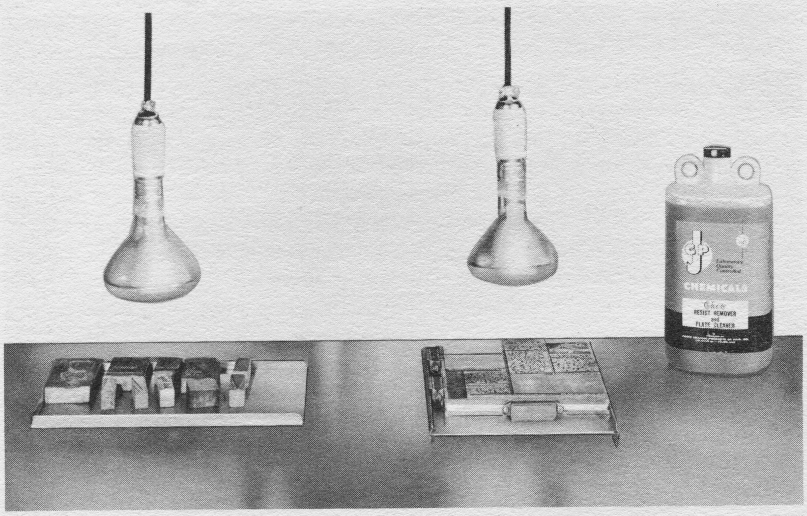
Wet the brush and charge it with FFF pumice, and rub the resist, which is quickly removed. Rinse plate with water, and dry with air blast.

Removing Resist With Willow Charcoal Block

Resist also may be removed by wetting the charcoal block with water

and rubbing the resist. This is an excellent method when carefully used, on level plates. When plates are not level, use the brass brush. Rinse with water, and dry with air blast.

ZINC. After resist removal, zinc is prepared the same as type forms. However, zinc plates with resist removed sometimes come to the Brightype department in a badly-oxidized condition. Pumice or Kitchen Klenzer powder will usually produce a good reflective surface. When these fail, use Gaco and a clean red rubber. The highly-alkaline Gaco is very effective in removing zinc oxide.



Method of removing resist from cuts made up in form.

MAGNESIUM. After resist removal, magnesium is prepared the same as type forms. Never use Copper Cleaner on magnesium, as it will rapidly etch this material.

Note: Magnesium is harder and more brittle than zinc.

COPPER. After resist removal and before rubbing plates with red rubber and/or pumice, apply a small amount of copper cleaner to the plate with a cotton pledget, or a few drops on a red rubber pad. This removes all oxides, so that copper will reflect the same as type metal.

LUDLOW. Ludlow sluglines should not be supersurfaced, and both Ludlow and linotype display lines are best prepared when rubbed with an electrotyper's rubber. Do not use electrotyper's rubber for text type.

NEGATIVE SPRAY METHOD OF PREPARING FORMS

Pre-Preparation

Resist must be removed from all cuts. See "RESIST REMOVAL."

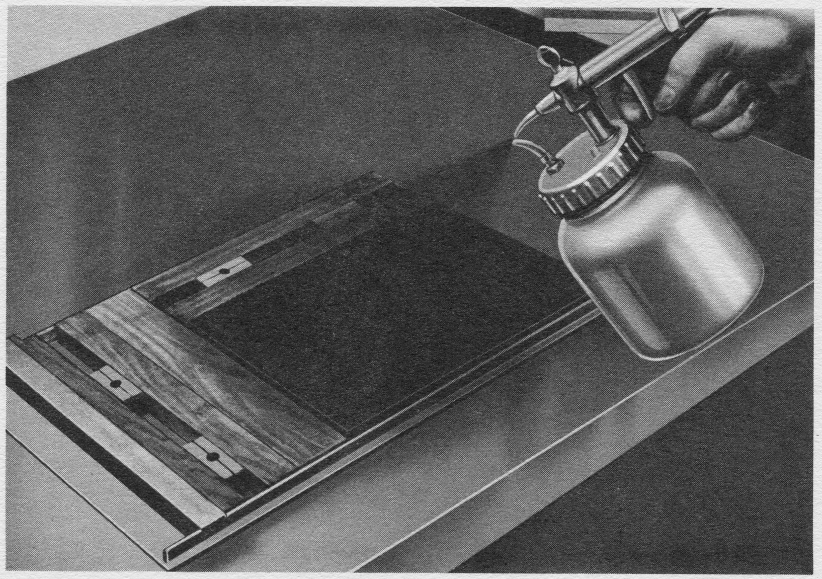
Oxides must be removed from copper and zinc plates. See "COPPER" and "ZINC."

Ink must be removed from form. New, unused electros should be wiped with alcohol or lacquer thinner.

Combination forms containing cuts and type may be rubbed with clean red rubber and/or pumice to obtain clean diffusive surface. (Pumice and brass brush may also be used.)

All above operations may be done on a stone or galley cabinet as a preliminary to placing form in spray booth. Any residue is blown off in the spray booth.

Pre-preparation of all-type forms requires only removal of ink. Rubbing of type surface is done after spraying.



Form is sprayed with Negative Spray.

Spraying

Blow off any residue from form and spray with Negative Spray gun adjusted to give a rather wet spray on the form. Be sure form is completely covered. Some forms require turning to be sure spray covers leading between lines.

Use a red rubber to rub off the spray from image surface. This rubber block becomes black and shiny, and keep it that way for this operation. After most of the spray has been removed and blown off, go over the form with a clean, freshly-sanded rubber.

Care must be taken with this operation so that background is not removed from counters of type or from the background of highlight dots on halftones. Printing surface must be clean and diffusely-reflective after this operation.

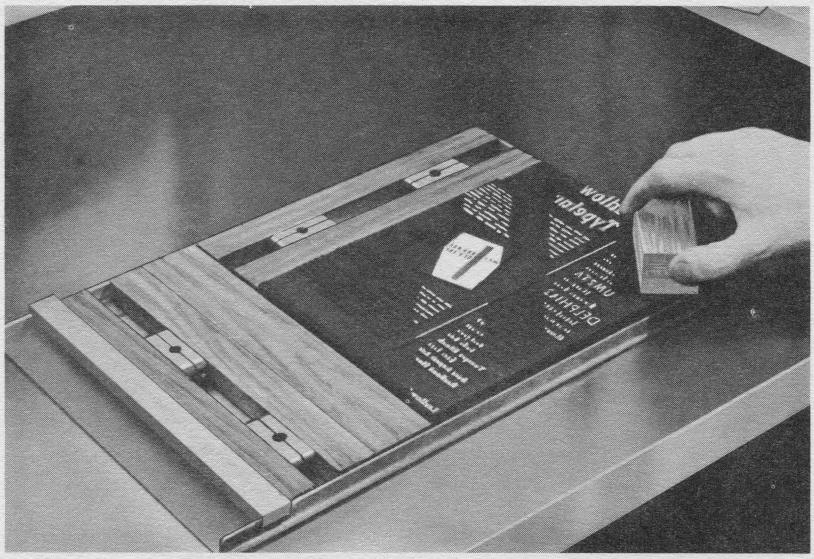
If background has been removed, use an opaquing brush and a glass of Negative Spray as retouching tools. Paint Negative Spray on areas that have had background removed, and then wipe again with rubber. Many

operators use their forefinger to clean up such areas on halftones instead of the red rubber, and have become very adept at this operation.

Inspection

This is the most important operation. The form is placed on the stone under the inspection lamp and examined to see if Negative Spray has been removed from all printing surfaces, and also to see that background is covered so it will not show on the film.

Note: Operations of pre-preparation, spraying, inspection and loading of camera may be divided among two or more operators to meet a production quota.



Negative Spray is removed from printing surface with soft rubber eraser.

NEGATIVE SPRAY METHOD USING "SPRAY-DULL"

This method bonds the Negative Spray to the background so that forms can be finally rubbed up with red rubber and/or pumice without rubbing out background.

Use Blair "SPRAY-DULL" made by Blair Art Products, Memphis, Tenn., and available at most art supply stores, or the Ludlow Typograph Company. (*Note:* Krylon Dulling Spray is not suitable.)

Pre-prepare form in regular way. Before applying Negative Spray, use the "Spray-Dull" all over the form. Wet a shop towel, wring out and cover a rubber block. Wipe the printing surface with this damp pad to remove the "Spray-Dull." Then use a paper-covered pad immediately to wipe the form dry, and spray the form with Negative Spray according to preceding instructions. If the Negative Spray sticks to image surface, it is due to insufficient cleaning with damp pad and paper pad. The damp pad may be used to remove such sticking coating.

This method is recommended for process color plates, shallow-etched plates, nickelplates, worn vignettes and foundry type. The form or plates may be put under running water to remove the Negative Spray, as "SPRAY-DULL" is water-soluble.

"WATER SPRAY" METHOD OF PREPARING TYPE FORMS (Not recommended for combination forms)

Use L-type sprayer adjusted for very wet spray. Spray forms either in spray booth or on stones. Push off most of coating from printing surface with large pad and let forms dry for 4 hours or until next day.

After thorough drying, use clean red rubber and/or pumice to clean up. Take to spray booth, blow off residue, inspect and load.

Overall elapsed time is greatest for this method, but unit time per job is the least. Special material used is "Water Spray," obtainable in gallon cans.

4-COLOR PROCESS TECHNIQUES

No. 1 Process. Remove resist from plates. Remove oxidation with copper cleaner. Rub up plates with red rubber and/or pumice. Spray plates with Blair "SPRAY-DULL" made by Blair Art Products, Memphis, Tenn., and available at most art supply stores, or the Ludlow Typograph Company. Other dulling sprays are not suitable. This spray coating bonds the Negative Spray to the form.

A. Wet a shop towel and wring out and cover a rubber block. Use this damp pad to wipe the printing surface to remove the "Spray-Dull." Then use a paper-covered pad to wipe the plate dry, which must be done immediately after using the damp pad. Then spray the form with Negative Spray, and wipe off. The plate can then be rubbed with a clean red rubber and/or pumice. Blow off residue. (If the Negative Spray does not wipe off easily, it is because the "Spray-Dull" was not removed. If so, wash plate and start over.)

Note: When job is finished, the plate is placed under running water to remove the Negative Spray. "Spray-Dull" is water-soluble.

No. 2 Process. Prepare plate in usual way, and spray with lacquer thinned with lacquer retarder. Remove the lacquer from the printing surface with cloth pad and lacquer retarder. The plate does not have to be completely cleaned. Set each plate aside to dry for 10 to 15 minutes, then rub up plate with red rubber and/or pumice. A little practice will indicate how well to originally clean off the lacquer with the retarder, so that minimum rub-up is necessary to complete. After plates are cleaned, spray them with Negative Spray, and wipe off.

No. 3 Process. Mix one ounce SAE 20 machine oil to one quart of Negative Spray and add one quart Negative Spray Thinner. Prepare plate in usual way, spray with this thin coating, and wipe while wet.

Note: All of above processes end up with a Negative Spray coating. This coating is necessary in order to obtain a clear positive. If lacquer coating is used alone with the Fine Line Developer, it may cause tinting of the background.

After preparing plates by any of above methods, follow instructions for use of Fine Line Developer. It will be found that this developer will produce larger highlight dots than previous techniques. *This is particularly desirable for photoengraving reproduction.* It has been found possible to increase developing time 10 to 15 seconds more than the chart calls for in order to obtain slightly-larger highlight dots without materially changing the shadow values. Use Super Developer for duplicating plates.

Operator should be conversant with each of the three methods, so a proper choice of process may be made. This depends upon the character of the plates to be processed.

If the plates consist of large areas of highlight dots, the #2 Process is the best choice. If the highlight areas are medium, the #1 Process would be best. Small areas of highlights indicate the #3 Process. If plates are worn and rounded, either #1 or #2 Process should be used.

After preparing by any of the above methods, the dead metal is painted out with Negative Spray and opaquing brush. However, if a negative is to be made from the positive for photoengraving purposes and the plate is to be curved for web letterpress work, the dead metal should not be painted out unless requested.

Notes on 4-Color Process Plates

4-color process plates must be cleaned of resist, and are usually mounted on ¾" plywood base, with No. 4 or No. 6 carpet tacks at edges of plate.

Mount each color of a 4-color set in the same place on the same base, which insures correct size. More than one job may be shot at the same time on a large base, provided each plate of each 4-color job is mounted in the same position. In order to insure accuracy, use stable base film such as PB, Estar or Cronar.

Progressive proofs will indicate what parts of the plates need masking out with Negative Spray applied with a brush. Do not paint out register marks.

Do not mask out dead metal if negative is to be made for photoengraving, unless instructed to do so.

FINE LINE DEVELOPER

Technique: Agitate 20 seconds, balance still-develop.
Temperature: 66°F.
Exposure: Standard exposure, or 10% less.
11 x 14 Type 3 Film: Use 1 gallon Fine Line Developer
14 x 17 Type 3 Film: Use 1½ gallons Fine Line Developer
16 x 20 Type 3 Film: Use 2 gallons Fine Line Developer

Develop first film for 2 minutes and 10 seconds.
Add 5 seconds for each additional film up to 24 films.
Then discard developer and start over.

Make up chart as follows to check off each film developed:
2'10"— 2'15"— 2'20"— 2'25"— 2'30"— 2'35"— 2'40"— 2'45"— 2'50"— 2'55"— 3'00"— 3'05"— 3'10"— 3'15"— 3'20"— 3'25"— 3'30"— 3'35"— 3'40"— 3'45"— 3'50"— 3'55"— 4'00"— DISCARD.

STRIPPING 4-COLOR POSITIVE

Eastman issues a Q sheet No. 102, which describes a method for making a "blue" print-out image, suitable for stripping.

A blue-key print-out image is prepared by exposing PB or Estar film in contact with the black-printer film. Both are placed in a vacuum frame, and an exposure of several minutes is made to arc lamps. The exposed film is placed directly in the fixer, agitated until clear (about 30 seconds) and then is washed and dried. The result is a "blue" print-out image, suitable as a master layout for stripping.

POSTER WORK

4-color Brightype positives are blown up for poster work and for use in newspapers.

LOADING CAMERA – ADJUSTING COPYBOARD

The copyboard is adjustable for the following heights of material: .918″ *plus galley;* .918″ (type-high); .156″ *plus* ¾″ (11-pt. electros on ¾″ plywood); .065″ *plus* ¾″ (4-color originals or other .065 etched plates on ¾″ plywood).

Adjustment is made by loosening the four knurled wheels and pushing the copyboard toward the lens. The pointer is then moved to desired position with the center wheel, and is locked into position by tightening the four knurled wheels.

Note: Other heights of plates mounted on plywood may be used by underlaying the assembly to one of the four heights shown above.

The form is usually centered on the copyboard. In publication work more than one galley is mounted on the copyboard at one time. Adjustable fingers on the copyboard bars will hold galleys, forms or plywood boards so they will not tip in the vertical position. Magnetic clamps will hold galleys in position without adjustments. The copyboard is controlled by hydraulic means so it will move gently into vertical position and lock itself in that position. Exposure is made by pressing the button adjacent to the copyboard.

Locked-up forms, forms on galleys and mounted cuts usually require velour strips around the form to mask off the background, and these are held in place with magnets or tape. Plates mounted on plywood are self-masking when the spray coating extends well beyond the plates. Areas difficult to mask may be painted with negative spray solution.

CLEANING NEGATIVE SPRAY FROM FORMS

Many plants have a reducer on the Brightype spray booth air line, so that the spraying pressure is between 35-40 lbs. This is not adequate for cleaning, however, so a connection should be made on the main air line, which is usually 65 lbs. or over, and this pressure should be used for cleaning purposes only.

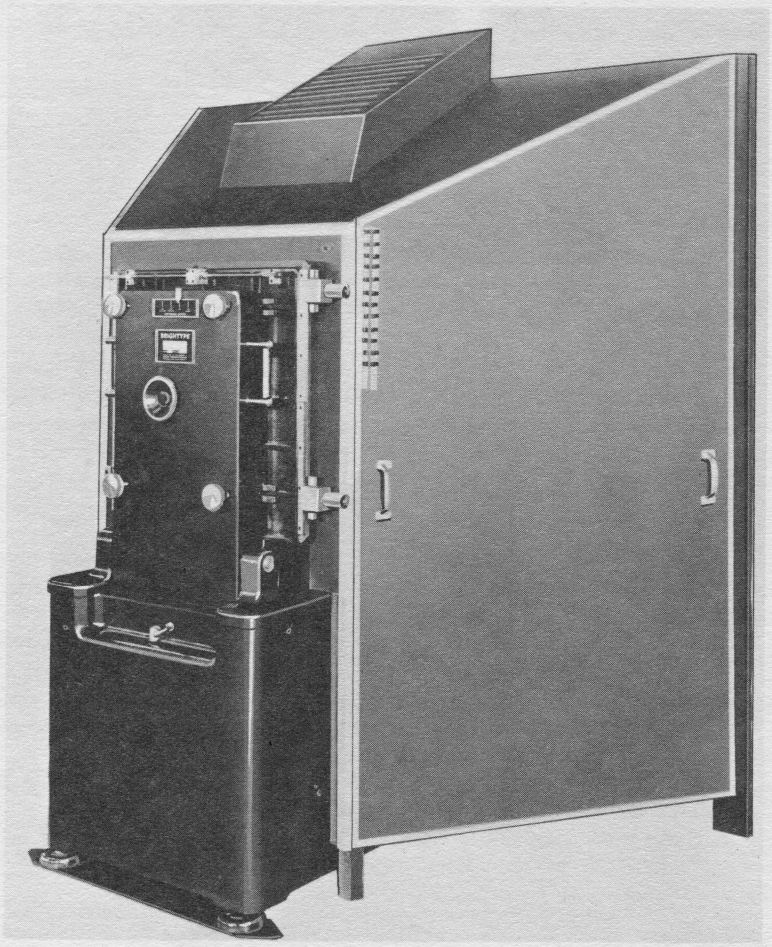
The form is put in the spray booth and brushed with a hand brush while using the high-pressure air gun.

Forms that have been treated with "Spray-Dull" or "Water Spray" may be put in cypress sink and washed with water and a brush.

Hot-metal forms that are to be dumped do not have to be cleaned before remelting.

FILMS FOR LETTERPRESS PLATES

Film positives are made and stripped up the same as for deep-etch or positive-working plates. They are then contacted to letterpress negatives



Front part of Brightype Camera.

for use in making powderless-etch, Dycril or photo-sensitive plastic plates or wrap-around plates made by any of these methods.

If pasted-up or black-and-white copy is provided, the negative is made in the horizontal position for photoengraving.

Photoengraved plates are made from Brightype conversions, curved and attached to web letterpress, by direct means and by use of double-sided tapes on saddles. Curving is being done by Ostrander-Seymour Vertical

benders, or with equipment made by Regan Industries, whereby curving is done first and etching is done after curving, or with equipment made by Patton. Probably other equipments have been made available for this purpose since this book was printed.

PLASTIC, WOOD CUTS OR DYCRIL

1. Rub with clean red rubber, which creates a tooth for holding aluminum powder.
2. Spray thoroughly.
3. Clean off spray with smooth blackened rubber.
4. Rub clean red rubber on galley containing Sleight Metallic Ink Co.'s Aluminum Powder No. 422, thus impregnating the rubber with powder, and apply generously to surface of cuts or plates.
5. Use strong air blast, and blow off. This will remove all the aluminum powder except that rubbed into the printing image, as this does not stick to the negative spray when used as instructed above.

Alternative method of preparing small wood cuts made up with other cuts and type:

Prepare the form in the regular manner, and as a last operation use a finger to pat a thin layer of white ink onto the printing surface.

A white plastic cut is now being made, which is processed as any electrotype.

NICKELED OR SILVERED PLATES

When these mirror-like surfaces are to be combined with other printing elements, they must be well rubbed with pumice.

If the plates are to be shot alone and not pumiced, the exposure may be reduced by one-third.

If such plates cover the 1½″ area in the center of the copyboard, they must be given a good rubbing with pumice, otherwise this center area will be under-exposed, as the mirror-like surface does not reflect much light to the lens.

The silver surface on an electrotype may be removed by swabbing the surface with a cyanide-iodine reducer, then rinse well.

COATING KODAFLAT ON GLASS

Make a trough about 30″ long, and place against a wall with one end lower than the other. Line with one piece of aluminum foil folded at lower end of trough so it will hold liquid without leaking.

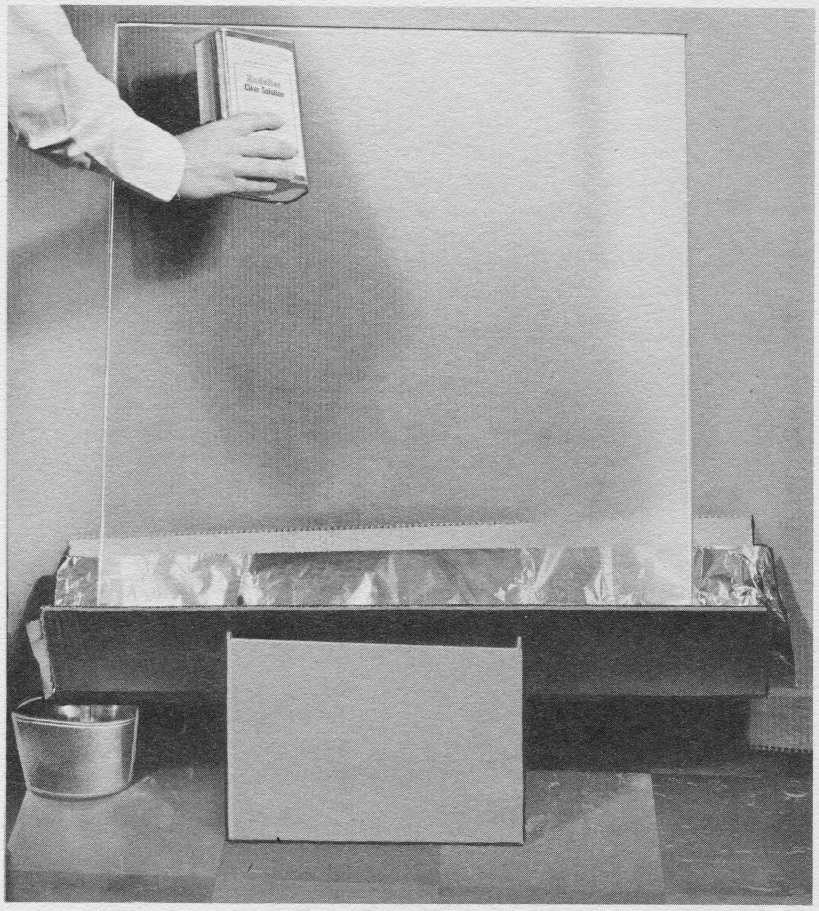
Place the glass plate vertically against the wall, with the lower end inside the trough.

Do not shake the Kodaflat. It should not be cold. Quickly pour Kodaflat generously along the top edge of the glass so the entire glass is covered. It will drain into the trough, and then may be recovered by pouring back into the can.

Place newspapers against a wall and set the recently-coated glass vertically against the wall to drain onto the newspapers.

Old Kodaflat plates may be reactivated with methyl-ethyl-ketone on a paper towel. Pat this lightly over the Kodaflat. Hot water on a cloth will also reactivate Kodaflat.

A small plunger type insect spray gun with glass cup can also be used to coat and/or reactivate the Kodaflat.



Method of applying Kodaflat.

REMOVING KODAFLAT

Place glass in cypress sink and scrape most of the old Kodaflat off with a razor or spatula. Residue may be removed with hot water and Kitchen Klenzer, or negative spray thinner, or lacquer thinner.

METHODS OF COMBINING LINE AND HALFTONE CAMERA PRODUCTS WITH A LETTERPRESS FORM

Aluminizing (Patented)

Line or halftone negatives may be laterally-reversed by making an autopositive from them. This autopositive may be sprayed with Krylon Silver Spray on the emulsion side, and mounted in the type form (strong lamp and vacuum frame required).

Diazo Method

A line or halftone negative may be printed directly onto Technisheen-ALBK, made by Technifax Company of Holyoke, Mass. This gives a reflective, laterally-reversed negative copy that may be mounted in the type form (arc lamp and vacuum frame and ammonia developer required).

Paper Method

Line or halftone negatives may be made directly on Brightype paper instead of film. These paper negatives are reflective and are laterally-reversed. They may be mounted in the type form.



Mounting paper negatives in type form.

MOUNTING FILM OR PAPER IN TYPE FORM

Film or paper can be mounted on pressboard with rubber cement or spray adhesive. Two methods of mounting on high material are used. A couple of pieces of double-sided Scotch tape are placed on back of film or pressboard. Drop a couple of drops of negative spray thinner on the tape and press into place in the form, or scrape off area in form and spray with spray adhesive, also spray back of film, or paper or pressboard and press into place. Shiny surfaces should be sprayed generously with Krylon Dulling Spray.

Mounting in Form

Recommended adhesives are double-sided transparent Scotch tape; Quik-Stick, a spray-on adhesive made by Maker Products, Inc., Croton-on-Hudson, N. Y.; or Anchor-it, a spray-on adhesive made by Anchor Chem-

ical Co., Brooklyn, N. Y. These adhesives may be obtained from art stores or the Ludlow Typograph Company.

Aluminized film should be mounted on pressboard, using recommended spray-on adhesives or rubber cement.

The Technisheen or Brightype Paper may be used direct after applying spray-on adhesive.

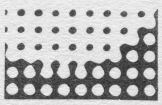
Use high wood material in forms, about two points lower than type height, and after form is prepared the coating can be scraped away and spray-on adhesive applied.

Any of the materials can be adhered into position by spraying both surfaces.

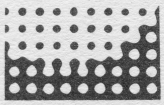
Another method of adhering is to put a few pieces of double-sided Scotch tape on the back of the negative or pressboard and a few drops of Negative Spray Thinner on the Scotch tape, and then press the negative in position. It is not necessary to remove negative spray from the form when Scotch tape is used, as the negative spray thinner makes it possible to bond directly.

After negatives are in place, the surfaces may be so shiny they do not copy well on account of excessive reflection. Use Krylon Dulling Spray on these shiny surfaces. Apply liberally and try to confine it to the shiny areas, although users report that it does not have to be removed from surrounding areas.

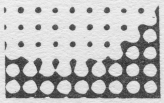
HOW TO DETERMINE EXPOSURE



No. 1—Normal



No. 2—Overexposed



No. 3—Underexposed

Prepare any copper halftone that is exactly type-high, adjust copyboard to type-high position, use copper cleaner, spray and rub up well, and place about 3″ away from center of copyboard. Take time to get fresh developer at 68°F. Use Type 3 film. Lens setting F27. Place ½″ film strips in position between vertical plate and plate stops.

Somewhere on the halftone you will find a group of middle-tone dots similar to No. 1—Normal above.

Make an exposure in vertical position, and develop and compare with the plate. If it duplicates, the exposure is correct. If the disconnected dots in No. 1 become heavy as in No. 2, then the film is overexposed. If the dots show a greater disconnection as in No. 3, then underexposure is indicated. By changing exposure so that the film matches the plate, the correct exposure is determined.

After the vertical exposure is determined, make exposure in horizontal position, adding about 10% to the exposure time. Change this exposure as found necessary to insure matching the results obtained in vertical position. You now have two basic exposures. One for vertical position and one for horizontal position.

Lens setting for general run of work is F27. Forms measuring 24" or more diagonally should use lens setting of F32. 50% more exposure time is required for F32 setting.

SUPER DEVELOPER

Determine standard film exposure, as per preceding instructions.

Kodalith Ortho Type 3, Acetate, PB, Estar, Strip Film—standard exposure—Super Developer—Still-development per chart.

Brightype Paper—one-half of standard exposure—Super Developer—Still-development per chart.

Ansco and Dupont equivalent films are processed same as above after the proper exposure has been determined, as per preceding instructions. (See "Fine Line Developer" instructions.)

Still-Development—20 seconds agitation—Super Developer

Temperature	
76°F	1 min. 53 sec.
74	2 min. 7 sec.
72	2 min. 20 sec.
70	2 min. 40 sec.
68	3 min.
66	3 min. 20 sec.
64	3 min. 47 sec.
62	4 min. 13 sec.
60	4 min. 40 sec.

It will be noted that 20-second agitation is called for on the chart, to be sure the film is thoroughly wetted, after which the film and developer are not to be moved during the rest of the development period, as called for on the chart. It is better to agitate the material rather than the tray. Do this by hand, or use tongs.

It is important that the film be pressed down against the bottom of the tray during the agitation period so it will not move during the still-development cycle. Any drifting or movement of the film destroys the effectiveness of the still-development technique. Some commercial films lie flat and still against the bottom of the tray, whereas others will not do so without mechanical aid. Plastic-coated wires may be used around the edges of the film to hold it down.

The advantage of using this technique is that it enables different operators to obtain uniform results, whereas it is difficult to obtain uniformity when agitation is used.

USEFUL LIFE OF ONE GALLON OF DEVELOPER AND FIXER – KODALITH

Developer	About 36 sheets of 8 x 10 positives
Fixer	About 50 sheets of 8 x 10 positives

Note: Chemicals should be mixed the day before using.

STRIP FILM USES

Strip film is shot in the horizontal position and waxed on the emulsion side with a Potdevin coating machine, or a paint brush dipped in hot wax,

or with the new spray adhesives. It can be used by the artist for mounting with artwork, or for maps and form work. Cut around words or block of copy with a sharp knife, with emulsion up, and loosen one corner of the strip film with a flick of the knife.

With emulsion down, place the film in position and burnish the back of the area to be transferred. Lift the film sideways, starting at the corner where the strip film was loosened, and the rubbed area will remain on the copy in intimate contact with the background. The waxed film will not adhere except where it is rubbed.

This method is faster than positioning the usual black-and-white copy. The sharp photographic image is protected by a thin membrane, and will not smear. It is easier to line up words by moving the film than to mount the words with tweezers.

When it is desired to have the copy block out the background, before waxing spray the strip film with Illinois Bronze Co. white gloss coating in a spray can.

Another use of strip film is to make a positive halftone by contact with a halftone negative, emulsion to emulsion.

The strip film may then be stripped emulsion to emulsion while wet, onto a wet Brightype positive made on PB, Estar or Cronar base.

This method makes it possible to strip halftones as closely as wanted to any image on the Brightype positive, such as credit lines.

BRIGHTYPE PAPER

Expose one-half of standard exposure and still-develop per chart, in Super Line Developer. Process as close to 68° as possible. Fix as rapidly as possible —not over 2 minutes—and do not wash longer than 2 minutes. Squeegee face-down on light table, and hang up to dry by the corners.

If objectionable curling occurs, place between blotters and run through dryer, image side away from drum. This gives a reverse curl, which usually flattens the paper.

The new spray adhesives such as Anchor-it and Quik-Stick are preferred adhesives. Rubber cement may be used after lightly sanding the back of the paper.

Do not leave open box exposed to safelight any longer than necessary.

The Schaeffer Waxer has proved to be an excellent method of applying wax. A tablespoon of vaseline to two pounds of wax increases adhesion. A hard surfaced card prevents curling of pasted up copy. Anchor-it and Quik-Stick are good adhesives. Rubber cement works if back of paper is lightly sanded.

A Brightype Vacuum Chuck is best method of holding paper copy.

KODALITH ORTHO PAPER

Kodalith Ortho Paper is used where exact size is not important, and is cheaper than Brightype paper, which holds size extremely well.

Kodalith Ortho Paper, regular, is used in vertical position for right-reading black-and-white copy.

Exposure is two-thirds standard film exposure, with agitated development for 2 to 2½ minutes. After fixing and washing do not squeegee, as this will distort the paper. Place the dripping wet paper on a blotter, with

another blotter over it. Then transfer the print to another pair of blotters, and repeat. This gives a total of three blottings, using six blotters, and the sheet ends up damp-dry, with no free water on it.

Place the paper face-down on the dryer apron, with the dryer set for 2 feet per minute at 200°F.

Do not develop the paper in developer that has been used for film, as this tends to stain the paper if much film has been processed. Film may be developed after paper development without trouble.

REPRO PROVING ON BRIGHTYPE

It is recommended that as many jobs as can be conveniently placed on galleys be shot together on paper. Jobs and galleys should be held in position with magnetic locks, thus eliminating the lockup operation. The paper repros can be cut up into separate jobs after drying, and may be waxed at this state.

This method gives the utmost in quality and is smear-proof. Incidentally it is the fastest method of producing repros.

POSITIVE STRIPPING FOR PUBLICATION WORK

The most economical method of handling publications is to make up each page on an end-lockup galley, and then lock the page on the galley instead of tying it up in the usual manner.

Where halftones are to appear, the form should be blanked out as is usually done. The halftone negatives are made in the usual manner, and a contact print is made from them on thin base film by first flopping the negatives. The end result is a laterally-reversed positive halftone which has been made slightly over the size called for by the layout. This operation may be handled economically by exposing a batch of films at a time. The Brightype positive is then taped down, emulsion up, and the thin base positive is attached to it, emulsion up.

A popular method of securing this halftone positive to the Brightype positive is to cut ¼" strips crosswise of a gummed paper tape or gummed label stock. This material may be used in just the corners of the halftone by wetting it and slipping it under each corner (gummed side up) and holding the corner with your finger while you pull the tape out. The above method works very satisfactorily as long as the halftone is 4 points away from any image on the Brightype positive. This allows full contact to be made without any loss of image.

Sometimes it is necessary that the halftone image abut the type forms, and for this type of work the Brightype positive may be made on PB, Estar or Cronar film, which are stable in size. Instead of making a contact print from the negative halftone on thin base film, it should then be made on strip film. In this case the halftone is not flopped, as in wet-stripping the strip film onto the stable base film, you strip emulsion to emulsion, and no adhesive is required.

The halftone as photographed is always slightly larger than the space it is to occupy. This requires cutting into the halftone image, and when this is done, *no hard edge appears and no stopping out around the edges is required.* Of course with this method no opaquing is involved.

This positive stripping technique is faster than the usual negative stripping methods using windows, taping and opaquing.

STRIP FILM POSITIVE

Instead of thin base positive for stripping, use strip film for work that has to be close to the form, such as credit lines.

It is necessary to use PB, Estar or Cronar film for the Brightype positive.

BRIGHTYPE CAMERA USED AS A COPY CAMERA

Strip Lines

Paste-up work and mechanicals create shadows when illuminated by fixed light sources on ordinary cameras. These shadows have to be opaqued, and considerable time is spent on this operation.

The moving light source of the Brightype camera creates no shadows, so paste-up copy and mechanicals have no strip lines to be opaqued. This is an important item. This lighting also obtains maximum density of negatives.

In order to handle paper copy, mechanicals, and reprint books, several methods are used:

1. A 28-gauge sheet of tin is pasted onto a ¾" plywood board with rubber cement, and after proper underlay the copy is held in position with magnets.
2. The plywood is covered with strips of double-sided Scotch tape, which holds paper copy in position.
3. The plywood is coated with black lacquer to act as a wood filler. The surface is then sprayed with "Quik-Stick," made by Maker Products Co., or Anchor-it, made by Anchor Chemical Co., which work somewhat better than the tape.
4. Some customers use a Monomelt Vacuum Chuck on the copyboard.

Note: The copy cannot be covered with glass, as this would reflect the moving light source. Shiny copy may be treated with Krylon Dulling Spray. It may also be dulled by wiping with a pledget of cotton charged with FFF pumice.

Any of above assemblies should be underlaid so they are type-high. Use two mounted type-high cuts and straight edge to determine underlay.

"Sock" Proofs

Reproduction proofs made with an extra sheet of pressure cause a halo around the image when photographed with fixed lighting.

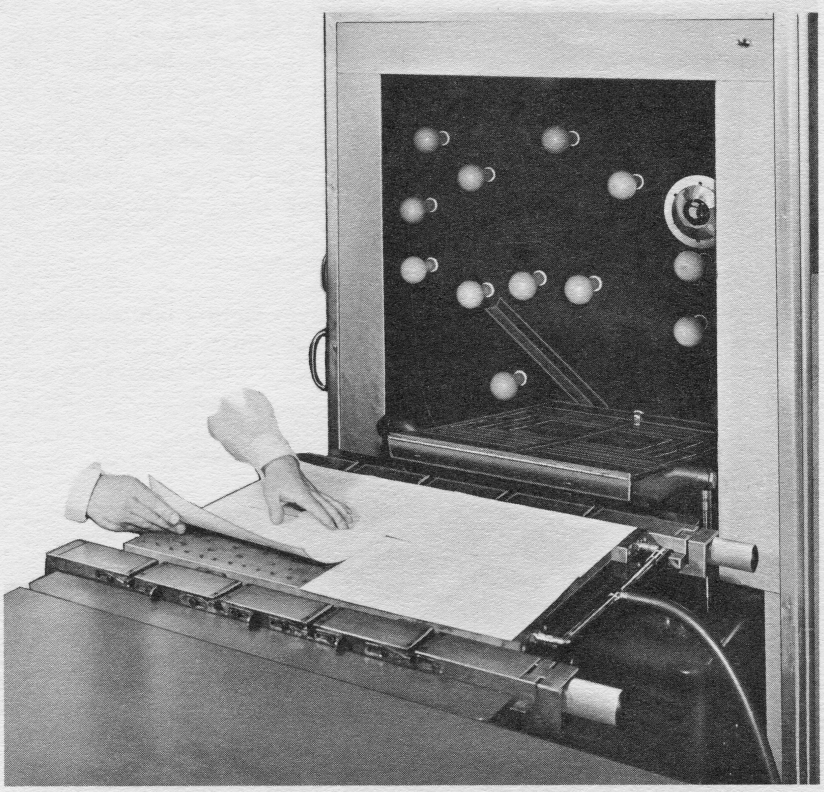
The Brightype moving light source creates no shadows when such dented proofs are photographed, and results are uniform and sharp.

CONVERTING PRINTED BOOKS TO FILM

Printed books are converted to negatives at high speed with a uniform quality not obtained by ordinary methods. This conversion method eliminates storage and handling of metal plates.

POSITIVES FROM BLACK-AND-WHITE COPY (Lateral Reversal)

Negatives from black-and-white copy in the horizontal position make it possible to produce deep-etch positives by contacting emulsion to emulsion. This eliminates the usual necessity for making positives out of contact, and gives uniform results.



Brightype Vacuum Chuck loaded with printed book pages.

WET CONTACT METHOD

Stable Base Films — such as PB, Estar and Cronar

Dense negatives requiring minimum opaquing are made by this method, which gives better contact than by vacuum, and avoids the static dust and dirt accumulation on the glass of a vacuum frame.

Soak a sheet of unexposed film in clean water for one-half minute. Make a sandwich with this film and the washed positive, and squeegee the two sheets onto the light table (use a paper towel on left edge of film to prevent film from slipping while using the squeegee). Expose for 20 seconds at 7 feet under the special contact-printing lamp. Develop as usual—3 minutes still-development—fix, and wash.

Acetate Film

Dry the positive first, then wet the positive and unexposed film together, and proceed as above. This will control the size.

(Another method of controlling the size is to soak the unexposed film in a separate tray for 10 minutes before squeegeeing the wet positive onto it.)

Expose and develop as with stable-base film.

Some film has a water-soluble anti-halation coating. In order to use this film as described above, lay the red plastic sheet from the vertical door onto the light table, and squeegee the film on it. The red color acts as an anti-halation backing.

Or, take a large sheet of film and expose it to the white light of the light table and develop it in the regular way. This produces a black sheet. The film may also be squeegeed on this black sheet, which acts as an anti-halation coating.

REVERSAL METHOD

Following is a method of reversing a Brightype positive into a negative. In most cases the making of a negative by wet contact is preferred.

This method is described for those who feel that it might be advantageous in their work:

Use two trays—one for developer and one for etch.

Put R2 Photoflood lamp in place of safelamp over developer tray.

Make up the following Etch Bath:

A. Copper Nitrate, 200 grams
Potassium Bromide, 10 grams
Glacial Acetic Acid, 160cc
Water to make 1000cc or 1 quart

B. One quart Hydrogen Peroxide, 3%

For use, mix equal parts of A and B. When bath slows down, a pint of B may be added as a replenisher.

Two-thirds regular exposure.

Develop in Kodalith Super Developer for usual 3 minutes by still-development. Wash for 30 seconds.

Place in above etch bath for 2 minutes. After the first 15 seconds turn on the R2 Photoflood, *and leave it on for all subsequent operations.*

Wash for 30 seconds. Examine closely at this time, and if the original image is not completely removed, wipe a cotton pad lightly over film to assist cleaning. If image cannot be removed by this method, re-immerse in etch bath and rewash.

Re-develop in Kodalith Super Developer for regular 3 minutes or longer.

Then wash, and dip film into hypo to harden image.

The following information on reversal methods may be of use:

Long exposure decreases size of shadow dots and increases size of highlight dots on negatives.

Overexposure increases background density of the positive and decreases background density on the negative.

Pinching up of shadow values on negatives indicates overexposure.

Dropping out of highlight values on negatives indicates underexposure.

For offset surface plates, use horizontal positive for chemical reversing. For photoengraving, use vertical positive for chemical reversing.

DARKROOM TECHNIQUES

"Picker-Upper"

Unwind ½" Scotch transparent tape, and rewind backwards, with

sticky side out. This is a handy tool for removing film from the box and for lifting a corner of the film from Kodaflat. It prevents thumbprints.

Housekeeping

Keep darkroom clean, with a daily cleaning of sink and trays. Spilled hypo should be cleaned up immediately, as it gets into the air when dry. Always rinse hands after handling hypo to prevent staining sensitized material.

Tray Cleaner

Water	32 oz.
Potassium Bichromate	3 oz.
Sulfuric Acid	3 oz.

Add sulfuric acid to the solution slowly, stirring constantly, and *never* add the solution to the acid; otherwise the solution may boil and spatter the acid on the hands or face, causing serious burns.

For use, pour a small volume of the tray cleaner in the vessel to be cleaned. Rinse around so that the solution has had access to all parts of the tray; then pour out the solution and wash the tray six or eight times with water.

Retouching Film

Method of removing image from a dry positive film:

Dampen area to be removed with an opaque brush and water, or Q-tip.
Scrape with etching or stripping knife.
Brush off residue with wadded cotton.

This results in a smooth surface, and with practice the film base will not be scratched.

Slight breaks in type, holes in type, or missing halftone dots may be touched up with a crow quill pen, No. 658 Gilott or Esterbrook 32, and india ink. If a mistake is made in retouching, wipe off with water and cotton. Use regular opaque for large areas.

Another method is to use a round Senefelder litho needle to make a depression in the film, then rub with a grease pencil or Tusche and wipe with cotton, which leaves a black coating in the depression. This method is useful on halftones.

Practice above methods on old films to acquire skill.

Maintenance

Bulbs used in the disc are 150 watt G.E. White Bulbs, and have been found good for several years' use. No other should be used, as the proper light distribution is obtained only with these bulbs. When necessary to replace any, be sure to replace all at one time. When this is done, one or two bulbs may prove defective in the first couple of weeks. However, experience has shown that further replacement usually is not necessary for several years.

If brushes on disc become noisy, they may be removed by unscrewing the plastic cover on each brush on front of disc. They may be lightly sanded and coated with vaseline.

The mirror does not require any maintenance, and a slight haze does not seem to impair its reflectivity.

Use regular 20-grade machine oil in the reducer gear box used for driving the disc. Oil motor every six months. The bearing on the disc is an oilless bearing.

MIXING CHEMICALS

Mix outside of darkroom in wooden sink. Disregard information on package, as this method is rapid and simple:

For Developer: Use two wide-mouth gallon jars and half fill each with hot water, about 120°F.

Swirl the water and dump in entire package of A developer, put on cap and shake. It is important to have the water in motion when the chemicals are dumped in. If properly done, the chemicals will not form a cake in bottom of jar, but if a cake does form, shake until it is dissolved. Add cold water to fill, and let stand until the next day. No stirring necessary. Do the same with B developer.

For Fixer: Proceed as above, but use cooler water to start—90° to 100°F. Fixer may be used as soon as mixed, but developer should be mixed at least one day before using.

POSITIVE-WORKING PLATES (Not Deep-Etch)

The Brightype will produce positives for deep-etch plates directly from letterpress forms, but this does not mean that it is *necessary* to make deep-etch plates.

Two positive-working plates are now on the market that are as simple and easy to use as the better-known pre-sensitized negative-working plates, and the cost is comparable. There have been great advances in this field, and more of these plates are on the way. Pre-sensitized deep-etch plates will shortly come out of the laboratories.

TECHNIQUE OF PHOTOGRAPHING SMALL MOUNTED CUTS

Clean a galley with negative spray thinner and lay double-sided Scotch tape on bottom of the galley. Prepare the cuts individually, but do not spray them at this stage. Then press the cuts against the Scotch tape, and if they do not stick tightly enough, use a little spray thinner to activate the tape.

Then spray the cuts, using both spray and air gun to get as dry a spray as possible. If it is too wet it will craze on the Scotch tape.

Continue spraying until the background is well covered, then clean off surface of cuts. This technique gives a perfectly-masked background.

Cuts may also be locked up on galleys with wood furniture between them. Spray cuts, furniture and background.

WHITE TYPE FOR TITLES

Iodine painted on any part of a positive image, wet or dry, will bleach the image yellow, and it also stains the background. After bleaching, immerse in fixing bath for 30 seconds only, which will clear the back-

ground, and the image will be a creamy white. This white is not entirely opaque, but tests indicate that it is usually opaque enough. Wash in usual manner.

IODINE FOR WHITE TYPE

Use standard drug store iodine for bleaching silver image, or the iodine used for iodine-cyanide reducer.

ELECTROTYPE SHELL

When an electrotype is worn out and a vinyl mold exists, it is possible to make a thick copper shell from the mold and convert it on the Brightype without backing it up with metal or finishing. Wet blotters on back help to keep shell flat enough.

COLOR SEPARATION FOR KEY LINE DRAWINGS

Key line drawings may be shot onto stable base films such as PB, Estar and Cronar, and then contact-printed onto opaque white Dinographic CD film, matte finish or Cromapaque. This method produces accurate material for color separation by an artist.

BRIGHTYPE FILM PRODUCTS

Made in horizontal position, and right-reading, with emulsion away from you: Used for deep-etch offset, rotogravure and for making photo-engraving negative. Makes excellent diazo master copy.

Made in vertical position, and wrong-reading, with emulsion away from you. Used in making offset surface plate negative, or for photoengraving white type.

BRIGHTYPE PAPER PRODUCTS

Made in vertical position: Used for paste-up work.

Made in horizontal position: Used for mounting in type form to produce white type. This copy also may be used to avoid the use of a prism in copying.

Line or halftone negative may be made directly on Brightype paper and mounted in letterpress form.

DUSTROYER

This fan is usually installed above the door. It has an air filter to prevent dust from being pumped into darkroom. The air in the darkroom is kept circulating by this means, and when a door is opened, the air comes out dust-free because of the slightly-higher pressure created by the Dustroyer.

AIR SUPPLY

35 lbs. is recommended for spray guns, and 65-75 lbs. is recommended for cleaning forms. If air is not available, a suitable self-contained equipment may be obtained from Sears, Roebuck & Co. Model 30K1458N without spray gun. This equipment is usually mounted in bottom of spray booth.

REDUCERS

Reducers are used to clear up fog and stains, and for removing images on positives.

Iodine-Cyanide Reducer

Iodine Stock Solution:

Iodine, resublimed	½ oz.
Potassium Iodide	1 oz.
Water to make	32 oz.

Cyanide Stock Solution:

Sodium Cyanide	3 oz.
Water to make	32 oz.

For Local Reduction:

Iodine Stock Solution	1 oz.
Cyanide Stock Solution	1 oz.
Water	8 oz.

POISON—Sodium Cyanide is a deadly poison—use it with great care. Never mix with acids. Discard waste solution into running water.

Farmers Reducer

Solution A:

1¼ oz. Potassium Ferricyanide
16 oz. Water

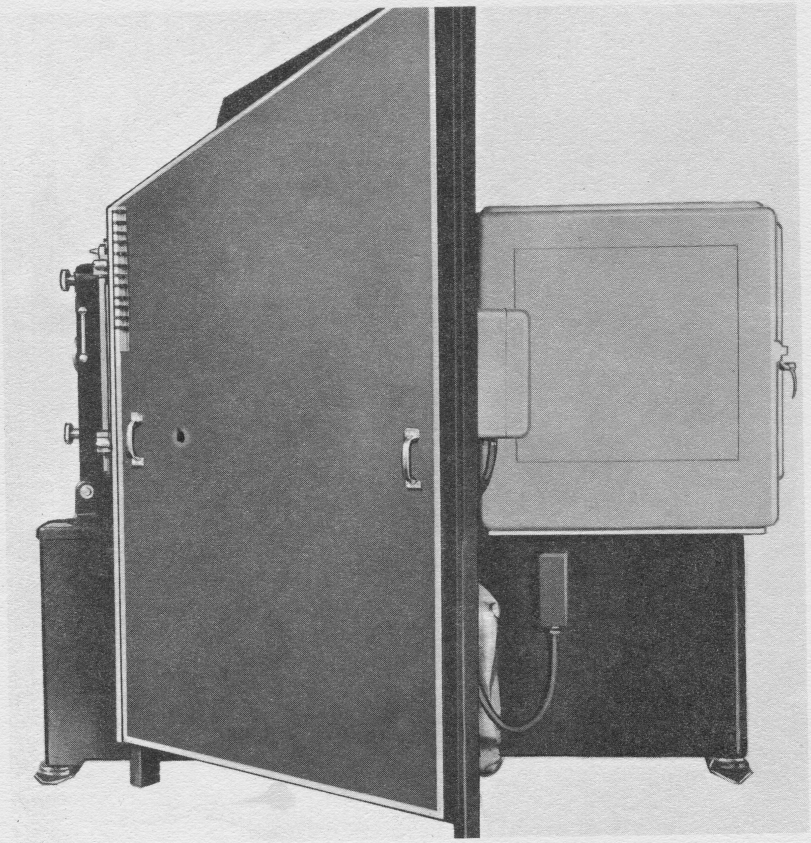
Solution B:

16 oz. Sodium Thiosulfate (Hypo)
64 oz. Water

For swabbing paper to eliminate streaks, mix equal parts of above to make one or two ounces. Swab and wash immediately.

For tray use—1 oz. A, 4 oz. B, 32 oz. Water.

A mixed solution does not keep long in combination. Use only freshly mixed solutions.



Side view of Brightype Camera.

S. ROSENTHAL & CO., Inc.